

Application No. 10/603,049  
Response to Office Action mailed March 22, 2007  
Response to Notice of Non-Compliant Amendment dated August 8, 2007

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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1-50. (Cancelled)

51. (Currently Amended) An apparatus for biological reactions, comprising:

a substrate-holding area;  
a substrate comprising a top surface and a flat bottom, disposed in a seated position on said substrate-holding area;

an array of wells formed in said top surface of said substrate;  
one or more components for real-time fluorescence-based measurements of nucleic acid amplification products held in at least some of said wells; and

a vacuum source disposed for communication with said substrate-holding area, whereby a vacuum can be established reaching to, and drawing upon, said flat bottom of said substrate, thereby maintaining the substrate in said seated position, wherein said vacuum does not reach to said top surface communicate through said substrate.

52. (Previously Presented) The apparatus of claim 51, further comprising a film disposed on said substrate, over said array of wells.

53. (Previously Presented) The apparatus of claim 52, wherein said film is optically clear.

Application No. 10/603,049

Response to Office Action mailed March 22, 2007

Response to Notice of Non-Compliant Amendment dated August 8, 2007

54. (Previously Presented) The apparatus of claim 51, further comprising a passageway, said passageway communicating said vacuum source and said substrate-holding area.

55. (Previously Presented) The apparatus of claim 51, wherein said substrate comprises a micro-plate or card.

56. (Previously Presented) The apparatus of claim 51, wherein said components for real time fluorescence-based measurements of nucleic acid amplification products comprise at least a probe and primers.

57. (Previously Presented) The apparatus of claim 51, further comprising an excitation beam adapted for optical communication with said components for real time fluorescence-based measurements of nucleic acid amplification products.

58. (Previously Presented) The apparatus of claim 51, wherein the substrate-holding area includes indexing features for facilitating alignment of said substrate thereon.

59. (Previously Presented) The apparatus of claim 58, wherein said indexing features include indexing bores.

60. (Currently Amended) A method for biological reactions, comprising:

Application No. 10/603,049

Response to Office Action mailed March 22, 2007

Response to Notice of Non-Compliant Amendment dated August 8, 2007

providing a substrate comprising a top surface including an array of wells and a flat bottom surface;

providing one or more components for real-time fluorescence-based measurements of nucleic acid amplification products in at least some of said wells;

placing said substrate on a substrate-holding area; and

establishing a vacuum reaching to, and drawing upon, said flat bottom surface of said substrate, thereby maintaining the substrate on said substrate-holding area, wherein said vacuum does not reach to said top surface communicate through said substrate.

61. (Previously Presented) The method of claim 60, further comprising directing an excitation beam into each of a plurality of fluorescent mixtures separately contained in said array of wells.

62. (Previously Presented) The method of claim 61, further comprising monitoring, in real time, the progress of each reaction.

63. (Previously Presented) The method of claim 62, wherein said monitoring includes measuring the fluorescence intensity from each of said fluorescent mixtures.

64. (Previously Presented) The method of claim 60, wherein said substrate comprises a high density micro-plate or card.

Application No. 10/603,049

Response to Office Action mailed March 22, 2007

Response to Notice of Non-Compliant Amendment dated August 8, 2007

65. (Previously Presented) The method of claim 60, wherein said substrate comprises a bore and a slot.

66. (Previously Presented) The apparatus of claim 51, wherein said substrate comprises a high density micro-plate or card.

67. (Previously Presented) The apparatus of claim 51, wherein said substrate comprises a bore and a slot.

68. (New) The apparatus of claim 51, wherein the substrate has no through holes between any of the wells of the array of wells.

69. (New) The method of claim 60, wherein the substrate has no through holes between any of the wells of the array of wells.

70. (New) The method of claim 60, wherein the components provided in at least some of the wells comprise at least an analyte-specific detection reagent and primers.